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CATCH OF SURROUNDING NET IN SALLOUM BAY

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ABSTRACT:

By using surrounding net the author established that the Salloum Bay is rich in fish production (on an average 883 kg/ship/night). The dominant species in the studied area are: Sardinella aurita, Boops boops, Scomber japonicus and Trachurus mediterraneus.

INTRODUCTION

Remarkable changes in the hydrographic and ecological conditions in the south-eastern part of the Mediterranean Sea have been observed after the construction of the Aswan High Dam in 1966 (1, 2, 5). These changes highly affected the pelagic fisheries especially sardine along the south-eastern part of the Mediterranean Sea. As it is known, before the construction of the High Dam, fishes belonging to genus Sardinella constituted from 27.8 to 68.5% of the total fish catch from the Egyptian waters (3, 4, 6). The catch of sardine has been sharply decreased from 18 thousand tons in 1962 to less than one thousand ton in 1972. However, in the last few years, there were some indications of Sardine concentration in the area west of Alexandria.

The aim of this work is to investigate the possibility

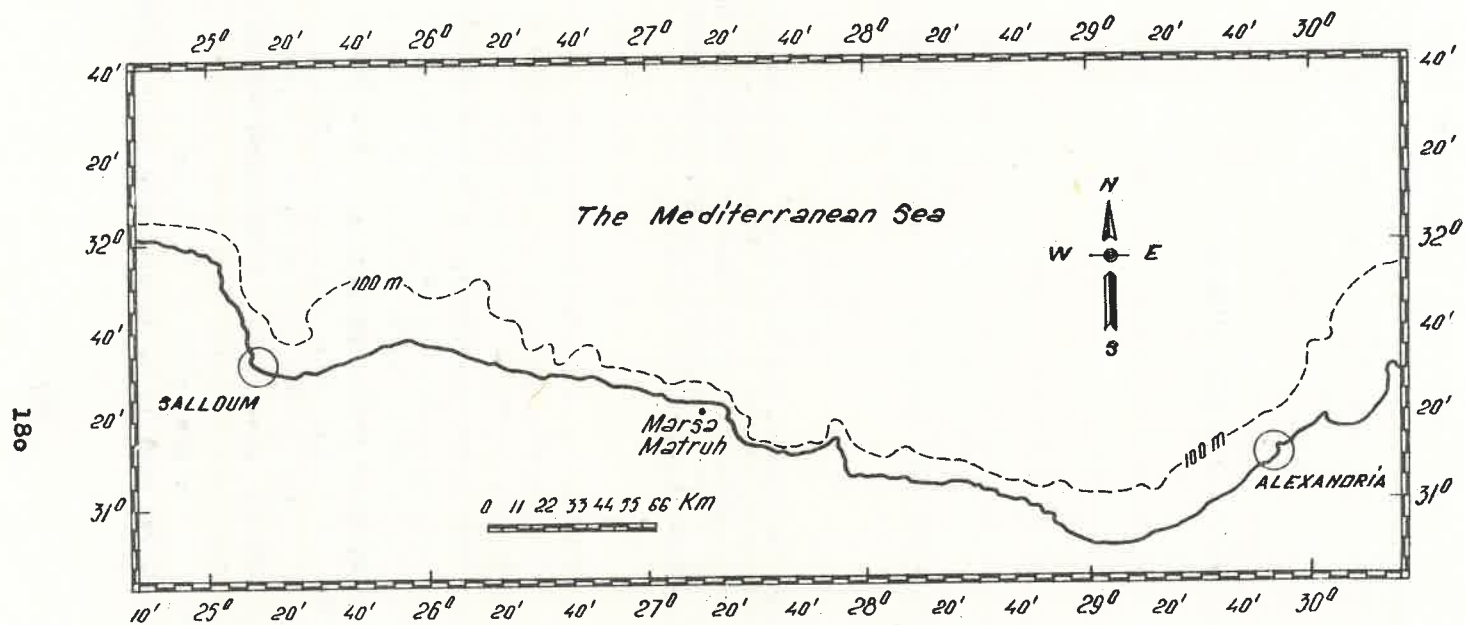


Fig. 1 - Area of investigation

of finding profitable pelagic fisheries in the Salloum Bay using light attraction and surrounding nets.

MATERIAL AND METHODS

During August, September and October 1974, May and December 1975, 15 light fishing operations were carried out during the time of darkness of the moon at depths from about 20 to 45 fathoms by surrounding net in the Salloum Bay (Fig.1). The fishing operations were carried out using a small fishing ship (length 13 meters and 54 H.P.) belonging to the Alexandria Institute of Oceanography and Fisheries.

Reaching the fishing area, one or two small rowing boats anchor about 500 meter apart, lighted the hanged butane gas lamps (ranging from 3000 to 6000 foot candle) for about 6 hours till the fish aggregate towards the lighted area. When a suitable amount of fish aggregates near the surface, the fishing operation begins. The fishing vessel circles the small lighted boat, while shooting the seine net. Once a circle at about 100 meter in diameter is complete, the messenger ropes holding the leading edges are pulled aboard the fishing vessel and bring the wings with them.

Then the net's cable is attached to the winch and then started to lift the closed net, the fish are collected to the middle of the net, and the net is completely aboard. The fish are then picked out of the net to the deck of the vessel, immediately graded and preserved with ice or salt.

In August 1975, statistical and biological data were obtained from the commercial catch of both private and North Fisheries Company ships.

The length of fish was measured to the nearest centimeter and weight to the nearest gram.

RESULTS AND DISCUSSION

Table 1 represents the catch composition of different fish species (in kilogram) caught by the surrounding net in the Salloum Bay by the small fishing ship. It is clear that there was a sharp decrease in the catch per lighting hour from August to September and October 1974 (65.1, 32.4 and 27.5 kg. respectively).

Table 1

Catch of surrounding net in the Salloum region (data obtained from the fishing ship by which this study is carried out)

Species Date	<u>Sardi- nella aurita</u>	<u>Boops boops</u>	<u>Trachu- rus me- diter- raneus</u>	<u>Scomber japo- nicus</u>	<u>Euthyn- us al- letatus</u>	<u>Sphy- raena sphy- raena</u>	<u>Trachy- notus glaucus</u>	No. of fish- ing ships	Depth (fath- om)	Dura- tion of light (hour)	Total catch (kilo- gram)
21. 8.1974	200.0	420.0	40.0	8.0	0.500	1.0	1.500	1	26.28	13.	671.0
22. 8.1974	100.0	800.0	40.0	40.0	10.0	-	-	1	25.27	12.5	990.0
Total	300.0	1220.0	80.0	48.0	10.5	1.0	1.500	2			1661.0
18. 9.1974	100.0	11.0	-	-	1.0	0.250	0.150	1	25	7	112.400
19. 9.1974	110.0	20.0	-	-	1.55	-	-	1	24	4	130.15
20. 9.1974	270.0	-	-	240.0	-	-	-	1	36	14	510.0
21. 9.1974	290.0	-	-	21.500	-	-	-	1	35.39	12	311.5
22. 9.1974	300.0	120.0	8.0	0.500	-	3.500	-	1	27.28	14	432.0
23. 9.1974	480.0	-	-	50.0	-	-	-	1	30.44	11.5	530.0
Total	1550.0	151.0	8.0	312.0	1.155	3.750	0.150	6			2026.55
10.10.1974	70.0	0.200	10.0	8.5	15.0	0.615	-	1	27.34	10	99.325
11.10.1974	130.5	75.0	70.0	240.0	0.100	1.00	-	1	25.28	8	516.60
12.10.1974	86.0	-	-	82.0	-	-	-	1	31.38	10.5	168.0
Total	286.5	75.2	80.0	325.5	15.100	1.625	-	3			783.825

The catch of Boops boops in August 1974 contributed 73.4% of the total catch, while in September the catch decreased to 7.4% and then slightly increased to 9.6% in October.

The catch of Sardinella aurita in August 1974, contributed 18.0% of the total catch, while in September the catch increased to 76.5% and then decreased in October to 36.5%.

Gradual increase in the catch of Scomber japonicus was observed from August to October 1974, contributed 2.9 %, 15.4 % and 41.5% of the total catch respectively.

The catch of Trachurus mediterraneus was represented in August 1974 by 4.8 % of the total catch, in September 1974 by 0.4% and in October 1974 by 10.2%.

Beside the above species, small amounts of Scombrid sp., Sphyræna sphyræna and Trachynotus glaucus were found in the catch.

Table 2 represents the catch of the North Fisheries Company and private ships. The percentages of different fish species were given between brackets.

Table 2

Catch of the surrounding net in the Salloum region
(data obtained from private ships and those belonging
to the North Fisheries Company)

Species Date	<u>Sardi- nella aurita</u>	<u>Boops boops</u>	<u>Trachu- rus me- diterraneus</u>	<u>Scomber japonicus</u>	No. of fish- ing ships	Total catch (kg.)
8.8.1975	1680.0	520.0	20.0	160.0	6	2380.0
9.8.1975	5640.0	1960.0	-	140.0	5	7740.0
10.8.1975	5220.0	1360.0	100.0	100.0	8	6780.0
11.8.1975	2800.0	1460.0	200.0	-	6	4460.0
12.8.1975	4240.0	1960.0	100.0	-	8	6300.0
13.8.1975	4240.0	2260.0	20.0	220.0	7	6740.0
14.8.1975	5500.0	2480.0	-	-	8	7980.0
Total catch (kilogram)	29320.0	12000.0	440.0	620.0	48	42380.0

As shown in the table, the commercial catch of the surrounding net obtained during August 1975 was found to be 42380 kilogram (average catch of one ship for one night equals 883

kilogram). The catch per lighting hour from the commercial catch was determined from the catch of 9 ships (6980 kilogram) through light duration of 109 hours, and it was found to be 64.0 kg/lighting hour. Sardinella aurita was found to be dominant in the catch, representing 69% of the total catch. The catch of Boops boops representing 28.3% of the total catch, while that of Scomber japonicus and Trachurus mediterraneus were 1.5% and 1.0% from the total catch respectively.

CONCLUSION

The results of fishing operations that have been carried out during the period from August to October 1974 and August 1975 by the surrounding net using a small fishing ship as well as those obtained from the North Fisheries Company and the private ships indicate that the Salloum Bay is rich in fish production, where the catch of one ship per night varies between 500 and 1550 kilogram, and the average catch of one ship for one night equals 883 kilogram.

It was also found that, the catch per lighting hour for the months August, September, October 1974 and August 1975, were represented by 65.1, 32.4, 27.5 and 64.0 kg. respectively. This means that the catch per unit effort was generally high in August and it decreases to half its value in September. A further decrease was observed in October, which can be considered as the end of the fishing season.

Sardinella aurita VALENCIENNES, 1847, Boops boops LINNÉ, 1758, Scomber japonicus HOUTTUYN, 1782 and Trachurus mediterraneus STEINDACHNER, 1868 constituted the dominant fish concentrations during the period of study.

Beside the above four mentioned species, small amounts of Scombrid sp., Sphyraena sphyraena LINNÉ, 1758 and Trachymotus glaucus BLOCH, 1787 were also recorded in the catch of the surrounding net.

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